

REMARKS/ARGUMENTS

Claims 1-25 are pending in the present application. In response to the rejection under 35 U.S.C. §112, Second Paragraph, claim 21 has been amended to more clearly recite the invention and claim 22 is canceled without prejudice or disclaimer. The amendment of claim 21 is supported by the disclosure at p. 8, line 4 of applicant's specification. Additionally, in order to further distinguish the invention from the prior art, claims 1 and 23 have been amended to more clearly define the subject matter of applicant's invention. These amendments are supported by the teachings at page 2, lines 10-13 and page 8, lines 5-8. No new matter has thus been added by these amendments. Entry of this Amendment is respectfully requested. Upon such entry, claims claims 1-21 and 23-25 (as amended) will be pending in this application.

CLAIM REJECTIONS UNDER 35 U.S.C. §112

Claims 21 and 22 are rejected under 35 U.S.C. §112, Second Paragraph. The basis of the rejection is that the claims contain the trademark/trade names DC-190 and DC-193, respectively (DC = Dow Corning). According to the Office Action, the claim scope(s) is/are uncertain because a trademark or trade name does not identify or describe the goods associated with the trademark or trade name.

In response to these rejections, applicant has amended claim 21 to state that the dimethicone copolyol is a silicone copolymer. The dimethicone copolyol component of the invention is discussed at, *inter alia*, page 7, line 17 to page 8, line 16 of applicant's specification. In particular, at page 8, lines 2-14, the compositions sold under the trademark/ trade name DC-190 and DC-193 are described as being "silicone copolymers". See, e.g., page 8, line 4. Thus, the amendment to claim 21 is completely supported by the teaching contained in the specification as filed and no new matter is added by such amendment.

Claim 22 has been canceled since that claim would be redundant to claim 21 if it were amended in the same manner as the previous claim. Such cancellation is, however, without prejudice to or disclaimer of applicant's right to pursue patent protection for the subject matter of the claim in either this or a subsequent, e.g., divisional, application.

For the reasons above, The rejection of claim 21 under §112 is believed to have been overcome, while the rejection of claim 22 is rendered moot due to its cancellation. The Examiner

is, therefore, respectfully requested to reconsider and withdraw the §112, Paragraph 2 rejection of claims 21 and 22.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claims 1-2, 4-9, 11-14, 17-18, 23 and 25 are rejected under 35 U.S.C. §102 (e) as allegedly anticipated by Miyamoto et al. '435 (U.S. 6,492,435) taken in view of the evidence given in Miyamoto et al. '099 (U.S. 6,451,099). This rejection is respectfully traversed.

Miyamoto et al. '435 specifically refers to ball-point pen inks, which unlike the formulation of the present invention, do not work in a wick style marker or a free ink system marker. As mentioned in page 1, line 35 of the '435 patent, these ball-point pen inks have a viscosity of 6,000 to 100,000 mpas which allows suspension of its particles and prevents settling due to its mere thickness or jelly like structure. An ink flow would not be possible through the wick up to the writing tip. The present invention, in contrast, is directed to a formulation comprising, *inter alia*, a dimethicone copolyol and submicron polymeric particles wherein at least the dimethicone copolyol and the polymeric particles are cohesively bonded to one another so as to produce a substantially homogeneous non-settling ink composition. Moreover, the presently claimed formulation lacks the jelly-like structure disclosed by the cited reference to prevent settling and thus applicant's formulation readily flows through the wick and into the writing tip.

U.S. 6,451,099 utilizes titanium dioxide as mentioned in the Abstract of the patent. The present invention avoids the use of titanium dioxide due to settling problems which may otherwise occur upon inclusion of this material, as mentioned in page 1, line 10 of the specification. Miyamoto '099 overcomes these settling problems by having an ink with high viscosity. The present invention, in contrast, utilizes an ink that is very thin (5.0-10.0 centipoise at 70 degrees Fahrenheit) which in turn enables the invention to use hollow microspheres in place of the titanium dioxide. As cited in page 2, line 6 of the specification, the inks of the Applicant's ball point pens have an entirely different mode of operation than capillary markers and/or free ink system markers such as are disclosed in the two Miyamoto patents cited by the Examiner to reject applicant's claims..

The Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection of applicant's claims under 35 U.S.C. §102(e).

CLAIM REJECTIONS UNDER 35 U.S.C. 103

Claims 15-16 are rejected under §103(a) over Miyamoto et al. (U.S. 6,492,435) in view of Wang et al. (U.S. 5,769,931). This rejection is respectfully traversed. The rejected claims depend from claim 1 and thus include all of the recitations of that claim. Claim 1 is distinguished above over Miyamoto '435 above and those comments are specifically incorporated by reference into this discussion.

As to the patent to Wang et al. which is combined with Miyamoto '435 to reject applicant's claims 15-16, U.S. 5,769,931 refers to an ink with high viscosities to avoid settling problems. This type of ink is normally used for ball point pens. As cited in page 2, lines 45-55 of the '931 patent, various gums are utilized to increase and maintain viscosities. Nowhere is it mentioned the use of hollow microspheres to generate opacity and/or the use of dimethicone copolyols to suspend the microspheres. The inks described in Wang et al. will not work in a wick or capillary action system and/or free ink systems which is the use contemplated for the presently claimed formulations. Their viscosity range prevents any flow through these modes of operation. Wang et al. thus clearly does not supply the elements of applicant's claimed invention missing from Miyamoto '435 and thus neither Wang nor Miyamoto '435, taken individually or in combination, teach or even suggest the invention as presently claimed.

The Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection of claims 15 & 16 under §103 over the combination of Miyamoto '435 and Wang et al. '931.

Claim 19 is rejected under §103 as unpatentable over Miyamoto et al. '435 in view of Imagawa et al. (U.S. 5,716,217). The rejection is respectfully traversed. The rejected claim depends directly from claim 1 and thus it also contains all of the recitations of that claim. Claim 1 has, moreover, been distinguished over Miyamoto '435 above and those comments are specifically incorporated by reference into this discussion.

Turning now to Imagawa et al. '217 which is combined with Miyamoto '435 to reject claim 19, this patent utilizes hollow sphere pigments but specifically limits itself to applications on "neon boards" or "lighted boards" as mentioned in page 1, lines 10-25. However, it is nowhere mentioned that there is a need to suspend or prevent the hollow microspheres from settling. As mentioned in page 5, lines 25-45 of the '217 patent, a carboxylic acid ester is used as a separating agent. The carboxylic acid ester is used in aiding the removability of the ink from its intended

writing surface, i.e. the neon boards. Applicant's invention does not employ this type of process. That is, as recited for example in claim 1, in the presently claimed formulation, at least the dimethicone copolyol and the polymeric particles are cohesively bonded to one another to provide a substantially homogeneous non-settling ink composition. Furthermore, as mentioned in page 6, lines 50-55 of the '217 patent, the assertions made that the particles with hollow microspheres will not coagulate or settle after long term storage in the pen was not substantiated by the inventors. This is the reason for using, in the present invention, demethicone copolyols to suspend the hollow microspheres and prevent coagulation and settling. Thus, Imagawa et al. clearly does not suggest the present invention, whether taken by itself or in combination with Miyamoto '435.

The Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection of claim 19 under §103 over the combination of Miyamoto '435 and Imagawa et al. '217.

Claims 21-22 are rejected under §103 as unpatentable over Miyamoto '435 in view of Loftin (U.S. 5,338,793). Claim 22 has been canceled without prejudice or disclaimer as noted above and therefore the rejection is moot as to that claim. As to claim 21, the rejection is respectfully traversed for the reasons which follow. Claim 21 depends directly from claim 1 and thus includes all of the recitations of that claim. Claim 1 is distinguished above over Miyamoto '435 and those comments are specifically incorporated by reference into this discussion.

Turning now to Loftin '793 which is combined with Miyamoto '435 to reject applicant's claim 21, U.S. 5,338,793 refers solely to dry erase inks. In contrast to the present invention, the inks described in the reference do not employ an agent to gain opacity to write on dark and/or colored surfaces. As mentioned in page 3, line 5 of the '793 patent, the silicones are simply used to provide wetness to the smooth glossy boards and not to suspend pigments. The use of hollow microspheres is not mentioned anywhere throughout Loftin's invention. Clearly, therefore, Loftin does not suggest the invention, whether viewed by itself or when taken in combination with Miyamoto '435.

The Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection of claim 21 over the combination of Miyamoto '435 and Loftin '793.

Claims 1, 3-4, 6-12 and 18-19 are rejected under §103 over the combination of Loria (U.S. No. 4,880,465) in view of Takemoto et al. (U.S. No. 6,827,433). Claims 3-4, 6-12 and 18-19 all

depend directly or indirectly on claim 1 and thus they contain all of the recitations of that claim. This rejection is respectfully traversed for the reasons which follow.

U.S. 4,880,465 to Loria specifically states in its Abstract that the ink described therein is to be used for ink-jet printing. This method of printing utilizes an electrical charge. The Applicant's invention does not require this method nor does the Applicant propose to use the ink for an ink-jet application. Furthermore, the '465 patent utilizes hollow microspheres, however, it does not disclose the use of dimethicone copolyols for preventing settling problems. The reason behind the absence of dimethicone copolyols is because although the ink can be agitated while in the storage container, the ink is not stored in the delivery nozzle for an extended period of time. Therefore, settling problems do not occur and the use of dimethicone copolyols, which are included in applicant's claimed formulation, is not necessary. In addition, ink-jet inks have completely different requirements from marker inks, e.g. ink-jet inks needs to have a resistivity of 100-1000 ohm-cm, as mentioned in page 5, line 20 of the '465 patent. The Applicant's invention does not have such a requirement. Thus claim 1 and the claims depending therefrom are clearly distinguishable over the Loftin '793 reference.

The Takemoto '433 invention also relates to the ink-jet industry. The '433 invention does not mention or even utilize hollow microspheres since they have no need to show opacity on dark surfaces. The silicone is used solely to achieve a good image on plain paper, i.e. to improve printability from the ink-jet printer, as mentioned on page 1, lines 60-65 of the patent. Therefore, the subject claims are also distinguishable over Takemoto '433, whether taken individually or in combination with the Loftin '793 patent. The Examiner is thus respectfully requested to reconsider and withdraw the rejection of claims 1, 3-4, 6-12 and 18-19 under §103 for the reasons provided herein.

Claim 2 is rejected under 103(a) over Loria '465 in view of Takemoto '433, as applied above to claims 1, 3-4, 6-12 and 18-19 and further in view of Imagawa et al. (U.S. 5,716,217). Claim 2 depends from claim 1 and thus contains all of the recitations of that claim. Claim 1 is distinguished above over both Loria '465 and Takemoto '433 and those comments are specifically incorporated into this discussion by reference thereto.

Turning to Imagawa, this reference is discussed above with regard to the rejection of claim 19. As indicated therein, this patent utilizes hollow sphere pigments but specifically limits itself to

applications on “neon boards” or “lighted boards” as mentioned in page 1, lines 10-25. Additionally, the reference does not contain any teaching that there is a need to suspend or prevent the hollow microspheres from settling. As mentioned on page 5, lines 25-45 of the ‘217 patent, a carboxylic acid ester is used as a separating agent. The carboxylic acid ester is used in aiding the removability of the ink from its intended writing surface, i.e. the neon boards. The Applicant’s invention does not employ this type of process. Furthermore, as mentioned in page 6, lines 50-55 of the ‘217 patent, the assertions made that the particles with hollow microspheres will not coagulate or settle after long term storage in the pen was not substantiated by the inventors. This is the Applicant’s reason for using dimethicane copolyols to suspend the hollow microspheres and prevent coagulation and settling.

For the reasons above claim 2 is believed to distinguish the invention over all of the references cited to reject that claim, whether taken individually or in combination and the Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection of the subject claim under §103.

Claims 13-14 are rejected under §103 over Loria ‘465 in view of Takemoto ‘433 as applied above in the rejection of claims 1, 3-4, 6-12 and 18-19 and further in view of Beach et al. (U.S. 6,309,452). Claims 13-14 depend, directly or indirectly, upon claim 1 and thus they include all of the recitations of that claim. The rejection is respectfully traversed.

The Loria ‘465 and Takemoto ‘433 references are discussed above in detail and those remarks are specifically incorporated herein by reference.

Turning, therefore, to a discussion of the Beach et al. ‘452 reference, this invention refers to printing inks which has requirements for Wet-Rub resistance. The Applicant’s invention does not have such a requirement. Furthermore, the ‘452 patent applies heat and pressure to cure the ink onto its substrate. The present invention does not need heat and pressure for the above process. In addition, the Beach patent lacks any teaching to use dimethicone copolyol to suspend the hollow microspheres since there is no need for suspension and long term storage is not an issue. Thus, claims 13-14 are deemed to be distinguishable over Beach et al. ‘452, whether the reference is taken alone, or in combination with either or both of Loria ‘465 and/or Takemoto ‘433. The Examiner is thus respectfully requested to reconsider and withdraw the rejection of claims 13-14 over the cited combination of references.

Claims 15-16 are rejected under §103 over Loria '465 in view of Takemoto '433 as applied above, and further in view of Pearlstein et al. (U.S. 6,087,416). Claims 15 and 16 both depend, directly or indirectly, from claim 1 and contain all of the recitations of that claim. The rejection under §103 is respectfully traversed.

The Loria '465 and Takemoto '433 references are discussed above in detail and those remarks are specifically incorporated herein by reference.

Turning, therefore, to a discussion of Pearlstein, U.S. 6,087,416 is another invention related to the ink-jet industry. The '416 patent does not contain hollow microspheres and has no need to show opacity on dark surfaces. The silicone and/or fluorinated chemicals in Pearlstein's invention are solely used to wet the intended substrate and improve printability. They are not used to improve stability, suspend any pigment or prevent settling. Thus, claims 15-16 are distinguishable over Pearlstein '416, whether taken alone or in combination with either or both of Loria '465 and/or Takemoto '433. The Examiner is, therefore, respectfully requested to reconsider and withdraw the rejections of claims 15-16 under §103.

Claims 1-24 are rejected under §103 over the combination of Imagawa '217, Loftin '793 and Tanaka et al. (US 2003/0228430). Claims 1-22 depend, directly or indirectly, on claim 1 and thus include all of the limitations of that claim. Claim 1 is distinguished above over both Imagawa '217 and Loftin '793. These references are combined, however with Tanaka et al. as indicated above. Turning thus to a discussion of that reference, Tanaka has no relationship to markers and/or writing instruments in general. Tanaka's invention relates to thermal transfer printing. The use of hollow miroospheres in the adhesive layer of the printing process does not apply in any way to such writing instruments and their inks. There is no mention, moreover, in the reference of suspending, stability and/or storage within a marker or writing instrument system. The entire publication describes a process for printing thermal transfers and is just another novel of use of hollow microspheres that is completely unrelated to the Applicant's presently claimed invention.

As demonstrated above, therefore, claims 1-22 are distinguishable over Imagawa '217, Loftin '793 and Tanaka et al., whether those references are taken individually or in any combination.

Furthermore, claims 23 and 24 are also included in the above-indicated rejection. Claim 23 is written in independent form and claim 24 depends from that claim. Claim 23 is directed to a

writing instrument for applying an opaque ink coloring composition, wherein the ink coloring composition recited in the claim is as described in claim 1. Thus, claim 23 and, by extension, claim 24 which depends from that claim, are believed to be distinguishable over the combination of Imagawa '217, Loftin '793 and Tanaka et al. for the same reasons as claim 1.

The Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection of claims 1-24 under §103 based on the combination of the three references discussed above.

SUMMARY

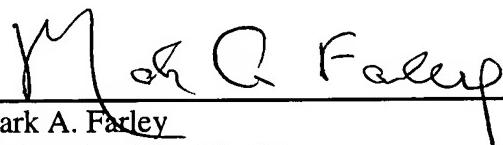
For the reasons above, applicant submits that his invention, as presently claimed, is believed to be distinguishable over all of the art cited to reject the claims. The Examiner is, therefore, respectfully requested to withdraw all of the claim rejections and to thus allow the application.

Applicant also notes the Examiner's comment in ¶14 of the Office Action that the prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant submits, however, that none of these references selected from among Chung et al. (US 6,930,135); Sergely et al. (US 6,312,510) and Miyamoto et al. (6,492,435) teach or even suggest the invention as presently claimed, whether viewed alone or in combination with any of the cited prior art.

If the Examiner believes that an interview would be useful in advancing the prosecution of this case, he is respectfully invited to telephone applicant's representative at the number below to arrange for such an interview.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 22, 2005:

Respectfully submitted,



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